SANTA CRUZ BIOTECHNOLOGY, INC.

PIG-Q (W-17): sc-54978

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Phosphatidylinositol-glycans (PIGs) are multi-pass transmembrane proteins that localize to the endoplasmic reticulum. PIGs exhibit various functions but all are crucial for the biosynthesis of the glycosylphosphatidylinositol (GPI)-anchor. Some PIG proteins are components of the GPI transamidase complex and play a role in the recognition of either the GPI attachment signal or the lipid portion of GPI. Other PIGs belong to the glycosyltransferase complex (GPI-N-acetylglucosaminyltransferase or GPI-GnT) and function in the transfer of N-acetylglucosamine (GlcNAc) to phosphatidylinositol (PI). A variety of other PIGs play distinct roles in GPI synthesis. PIG-Q, also known as GPI1, is a component of the GPI-GnT complex which is responsible for the first step in GPI synthesis, the transfer of GlcNAc to PI from UDP-GlcNAc. PIG-Q acts to stablize the complex and the expression of other subunits. It is not required for the enzymatic function but a loss of PIG-Q results in a severe defect of the GPI-GnT enzyme.

REFERENCES

1. Tiede, A., Schubert, J., Nischan, C., Jensen, I., Westfall, B., Taron, C.H., Orlean, P. and Schmidt, R.E. 1998. Human and mouse Gpi1p homologues restore glycosylphosphatidylinositol membrane anchor biosynthesis in yeast mutants. Biochem. J. 334: 609-616.
2. Hong, Y., Ohishi, K., Watanabe, R., Endo, Y., Maeda, Y. and Kinoshita, T. 1999. GPI1 stabilizes an enzyme essential in the first step of glycosylphosphatidylinositol biosynthesis. J. Biol. Chem. 274: 18582-18588.
3. Watanabe, R., Murakami, Y., Marmor, M.D., Inoue, N., Maeda, Y., Hino, J., Kangawa, K., Julius, M. and Kinoshita, T. 2000. Initial enzyme for glycosylphosphatidylinositol biosynthesis requires PIG-P and is regulated by DPM2. EMBO J. 19: 4402-4411.
4. Tiede, A., Nischan, C., Schubert, J. and Schmidt, R.E. 2000. Characterisation of the enzymatic complex for the first step in glycosylphosphatidylinositol biosynthesis. Int. J. Biochem. Cell Biol. 32: 339-350.
5. Tiede, A., Daniels, R.J., Higgs, D.R., Mehrein, Y., Schmidt, R.E. and Schubert, J. 2001. The human GPI1 gene is required for efficient glycosylphosphatidylinositol biosynthesis. Gene 271: 247-254.
6. Shams-Eldin, H., Azzouz, N., Kedees, M.H., Orlean, P., Kinoshita, T. and Schwarz, R.T. 2002. The GPI1 homologue from *Plasmodium falciparum* complements a *Saccharomyces cerevisiae* GPI1 anchoring mutant. Mol. Biochem. Parasitol. 120: 73-81.
7. Delorenzi, M., Sexton, A., Shams-Eldin, H., Schwarz, R.T., Speed, T. and Schofield, L. 2002. Genes for glycosylphosphatidylinositol toxin biosynthesis in *Plasmodium falciparum*. Infect. Immun. 70: 4510-4522.
8. Eisenhaber, B., Maurer-Stroh, S., Novatchkova, M., Schneider, G. and Eisenhaber, F. 2003. Enzymes and auxiliary factors for GPI lipid anchor biosynthesis and post-translational transfer to proteins. Bioessays 25: 367-385.
9. Pittet, M. and Conzelmann, A. 2007. Biosynthesis and function of GPI proteins in the yeast *Saccharomyces cerevisiae*. Biochim. Biophys. Acta 1771: 405-420.

CHROMOSOMAL LOCATION

Genetic locus: Pigq (mouse) mapping to 17 A3.3.

SOURCE

PIG-Q (W-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PIG-Q of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54978 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIG-Q (W-17) is recommended for detection of PIG-Q of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PIG-Q (W-17) is also recommended for detection of PIG-Q in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PIG-Q siRNA (m): sc-62807, PIG-Q shRNA Plasmid (m): sc-62807-SH and PIG-Q shRNA (m) Lentiviral Particles: sc-62807-V.

Molecular Weight of PIG-Q: 65 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.